

A new species of *Telmatobius* (Anura : Leptodactylidae) from Catamarca (Argentina)

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A new species of *Telmatobius*, *T. pinguculus*, is described from the mountains of Catamarca Province, Argentina. A preliminary key to the species of *Telmatobius* from this province is given.

INTRODUCTION

As currently understood, the Argentinian fauna of *Telmatobius* consists of 13 species, four of which are reported from Catamarca Province. All of them are stream dwellers and have restricted, not overlapping ranges : *Telmatobius hauthali* is found in one thermal spring at Aguas Calientes (27° 14'S 68° 16'W), *T. scrocchi* at Campo El Arenal (27° 06'S 66° 20'W), *T. stephani* in the isolated mountain range of El Manchao (28° 08'S 65° 54'W) and *T. ceorum* in the forested areas of Nevados del Anconquiya (27° 08'S 66° 02'W).

Field work in the mountains of this province has continued to reveal undescribed species of frogs and lizards, including the one herein described from La Ciénaga (about 27° 30'S 67° 00'W), near Medanitos (27° 32'S 67° 36'W).

Specimens used for descriptions are housed at Fundación Miguel Lillo Collections (FML).

***Telmatobius pinguculus* n.sp.**

(fig. 1-8)

Holotype. – FML 03910. Adult female.

Etymology of the specific name. – This name is a diminutive of the Latin word *pinguis*, meaning somewhat fat.

Diagnosis. – Done in relation with the other species of *Telmatobius* inhabiting Catamarca province. Spiny skin of *T. pinguculus* sets the difference with *T. hauthali* (granular), *T. ceorum* and *T. stephani* (smooth). The absence of suprahumeral fold and the presence of postcommissural gland in *T. pinguculus* set the differences with *T. scrocchi*, which has the opposite condition in both characters.

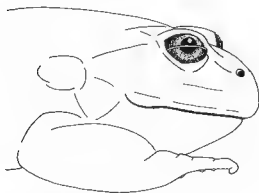


Fig. 1. - *Telmatobius pinguiculus*, lateral view of the holotype.

Description. - Snout-vent length (SVL) 56.0 mm. Head wider (18.6) than long (16.1); cephalic index 1.15. Head width about three times, and head length about 3.5 times in SVL.

Snout rounded in dorsal and lateral view, and shorter than eye diameter (snout length/eye diameter : 0.66). Canthus rostralis indistinct and rounded; loreal region nearly flat and inclined laterally. Pupil circular and palpebral membrane pigmented only in a narrow strip in the free margin; interocular distance about 2.3 times in head width. Tympanum and tympanic ring indistinct; supratympanic fold rather glandular, with small corneal projections, running from posterior corner of eye to the dorsal border of post-commussural gland. Nostrils rounded, flanged and not protruding, without projections or inflections, directed dorsolaterally and placed closer to eye (3.3) than to tip of snout (3.5); internasal dis-

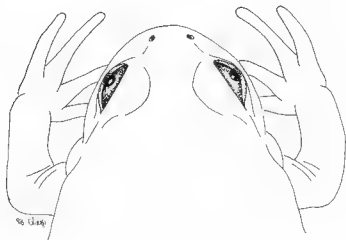


Fig. 2. - Dorsal view of the holotype.

tance (3.1) shorter than naso-ocular distance, and 2.5 times less than interocular distance. Tongue circular. Premaxillary and maxillary teeth small and sharp ; vomerine teeth present.

Skin on back and limbs with flat warts and small corneal spines ; ventrally smooth, with few corneal spines on borders. Cloacal opening at about mid-level of thighs ; anal fold small, not covering the cloaca.

Body moderately stout. Tip of fingers rounded and not expanded. Outer metacarpal tubercle almost quadrangular, about the same size (3.2) as the inner, elliptical, metacarpal tubercle (3.3) ; latter in contact with a round, flat, palmar tubercle, forming a heart-shaped structure. Subarticular tubercles hemispherical, protruded and not divided ; number of tubercles on each digit follows the formula I(1) – II(1) – III(2) – IV(2), the one on the pollex being the greatest. Palmar tubercles present. Webbing absent ; no dermal folds on fingers. Relative length of digits, from longer to shorter : $3 > 4 > 1 > 2$.

Tibio-tarsal articulation reaching the forearm ; heels in contact when femurs bent at right angle to body. Low fold from the tip of hallux to tibio-tarsal joint. Inner metatarsal tubercle elliptical and slightly protruding, larger (2.72) than the rounded, outer metatarsal tubercle (1.52). Subarticular tubercles hemispherical, protruding and not divided ; number of tubercles on each digit follows the formula I(1) – II(2) – III(2) – IV(3) – V(2). A single palmar tubercle at the base of each toe ; supernumerary tubercles on toes III, IV and V. Tip of toes rounded. Relative length of digits, from longer to shorter $4 > 5 > 3 > 2 > 1$. Palmar formula : I(1) ; II(2 – 1) ; III(2 – 2) ; IV(3 – 3) ; V(1). Plantar surface spiny. Ratio of foot length/SVL : 0.46. Tibia 3.3 times longer than wide, 46% of SVL.

Coloration (in alcohol). – Dorsally dark brownish-gray, with small, darker spots scattered ; ventrally pale gray.

Allotype. – FML 03920. Adult male. The same data as for the holotype.

Only the main differences with the holotype are pointed out.

SVL 53.0 mm. Head longer (17.3) than wide (16.2) ; cephalic index 0.93. Head width about 3.3 times, and head length about 3.1 times in SVL.

Snout shorter than eye diameter (snout length/eye diameter : 0.72), and interocular distance about 2.2 times in head width. Nostrils placed closer to eye (3.0) than to tip of snout (3.6) ; internasal distance (2.94) slightly shorter than naso-ocular distance (3.0) and about 2.4 times less than interocular distance.

Body slenderer, with a greater number of horny spines on chest. Inner metacarpal tubercle (3.0) about the same size as the outer (2.94), and not in contact with single plantar tubercle. Nuptial pad on the inner surface of pollex, consisting of a slightly cornified plate with numerous, strong, conical spines.

Forelimbs proportionally longer ; tibio-tarsal articulation reaching the posterior corner of eye ; tarsal fold shorter and more evident, reaching the distal 1/3 of tarsus ; supernumerary tubercles only on the fifth toe. Palmar formula : I(1) ; II(2 – 1) ; III[(2 – 1) (2 – 1 3/4)] ; IV(3 – 2) ; V(1). Ratio of length of foot/SVL 0.41. Tibia 3.1 times longer than wide, representing 44.5% of SVL.

Table I. – Measurements (in millimeters) of holotype, allotype and other paratypes of *Telmatobius pinguisculus*.

H : holotype ; A : allotype ; 1 to 7 : other paratypes ; SVL : snout-vent length ; HL : head length ; HW : head width ; SL : snout length (from anterior border of nostril to tip of snout) ; NO : naso-ocular distance (from posterior border of nostril to anterior border of eye) ; IN : internasal distance ; IO : interocular distance ; IMT : inner metacarpal tubercle ; OMT : outer metacarpal tubercle ; Imt : inner metatarsal tubercle ; Omt : outer metatarsal tubercle ; E : eye diameter ; T : tibia length ; t : tibia width ; F : foot length.

	H	A	1	2	3	4	5	6	7
SVL	56.0	53.0	50.0	55.0	52.0	51.0	51.0	53.0	50.0
HL	16.1	17.3	17.0	17.4	14.5	16.0	16.3	15.6	16.8
HW	18.6	16.2	16.7	17.0	15.6	16.2	16.8	18.1	16.3
SL	3.5	3.6	3.1	3.5	3.1	3.8	3.8	3.6	3.3
NO	3.3	3.0	3.2	2.39	2.78	3.2	3.4	3.4	2.92
IN	3.1	2.94	2.78	3.3	2.69	2.63	3.2	3.1	2.95
IO	7.9	7.2	7.3	7.1	7.2	7.3	7.8	8.3	7.2
IMT	3.3	3.0	2.80	2.87	2.76	2.82	2.93	3.6	3.2
OMT	3.2	2.94	2.61	2.56	2.52	2.72	2.55	3.0	2.56
Imt	2.72	2.21	2.34	2.65	2.35	2.46	2.68	2.48	2.25
Omt	1.52	0.74	1.30	1.08	1.20	1.24	1.26	1.24	1.02
E	5.3	5.0	5.1	5.4	4.9	5.5	4.4	4.3	4.8
T	23.6	23.6	22.7	23.9	22.9	22.6	22.8	24.1	21.3
t	7.1	7.7	7.2	6.7	7.2	7.2	7.9	8.0	7.4
F	26.0	25.3	24.2	26.4	25.0	24.1	27.0	23.0	23.0

Other paratypes. – FML 03921/1 to 5, adult females ; FML 03921/6 and 7, adult males ; the same data as for the holotype.

The sexual characters and degree of morphological variation between the holotype and allotype are confirmed by the paratypes. See variation in measurements in Table I.

Osteology (fig. 3 to 8). – The following description, based on only one adult female (FML 04373), is considered preliminary. General features of the skeleton are designed in fig. 3 to

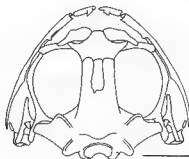


Fig. 3. – General view of skull (scale = 5 mm).

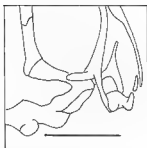


Fig. 4. – Detail of quadratojugal area (scale = 5 mm).

8, and only the most noticeable characters are noted. Skeleton for study was prepared following WASSERSUG's (1976) technique.

Skull. – Frontoparietal a single bone, with frontal region bifurcated. Premaxillary, maxillary and prevomer toothed. Palatines in contact with pterygoid and sphenethmoid ; the latter, as a complete ring, expanded anteriorly and laterally, with a wing-like process at each side. Ventrally, the sphenethmoid projecting posteriorly at about 1/3 the length of cultriform process of parasphenoid.

Pterygoid and squamosal in close contact with a strong quadratojugal ; pars articularis of quadrate separated from the jugal projection (this bizarre condition observed bilaterally). Medial ramus of squamosal noticeably short.

Hyoid. – Hyoglossal sinus strong ; anterior process of hyale poorly developed but observable ; alary process and posterolateral process well developed ; posteromedial process ossified, without stalk.

Pectoral girdle. – Omosternum cartilaginous ; sternum bilobed and strongly mineralized ; epicoracoids mineralized. Clavicle fused with scapula ; the latter firmly attached to coracoid by means of mineralized tissue.

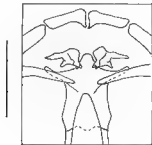


Fig. 5. – Detail of sphenethmoidal region (scale = 5 mm).



Fig. 6. – Hyoid (stippled area : cartilage ; scale = 5 mm).

Carpus (nomenclature according to ANDERSEN, 1978). – Os centrale postaxiale articulating with metacarpals III, IV and V ; os distale carpale 2 free, articulating with metacarpal II and os centrale postaxiale ; the latter articulating with the basal prepollical element. Ulnare and radiale independent ; an elliptical sesamoid on the radiale. Prepollex with five elements, the distal two cartilaginous.

Tarsus (nomenclature according to ANDERSEN, 1978). – Only three distal tarsal elements present. Os distale tarsale 1 articulating with prehallux ; os distale tarsale 2 articulating with metatarsal II and os distale tarsale 3 articulating with metatarsals III and IV.

PRELIMINARY KEY FOR THE SPECIES OF *TELMATOBIVS*
FROM CATAMARCA PROVINCE (ARGENTINA)

- 1.a. Dorsal skin granular ; postocular protuberances evident ... *T. hauthali* Koslowsky, 1895.
- b. Dorsal skin smooth or spiny ; postocular protuberances absent

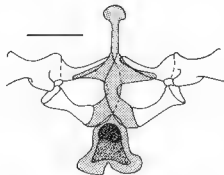


Fig. 7. – Pectoral girdle (stippled area : cartilage ; scale = 5 mm)

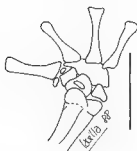


Fig. 8. — Carpus (scale = 5 mm).

- 2.a. Dorsal skin smooth, with definite, big spots ; ventrally pigmented 3
 b. Dorsal skin spiny ; when spots present, usually small and rounded ; ventrally pigmented only on thighs 4
- 3.a. Tympanum evident ; with round, white edged spots on dorsum and a constant intra-ocular spot ; ventrally dark gray with yellow, irregular spots scattered
T. ceiorum Laurent, 1970.
 b. Tympanum indistinct, with enlarged, dark spots on dorsum ; ventrally gray mottled on belly and thighs *T. stephani* Laurent, 1973.
- 4.a. Suprahumeral fold thick and glandular ; postcommissural gland absent
T. scrocchi Laurent & Lavilla, 1986.
 b. Suprahumeral fold absent ; postcommissural gland evident *T. pinguculus* sp. nov.

RÉSUMÉ

Une nouvelle espèce du genre *Telmatobius* est décrite d'après un matériel provenant de la province de Catamarca, Argentine. Une clef préliminaire des espèces de *Telmatobius* de cette province est donnée.

LITERATURE CITED

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